

Introduction

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Developing the Next Generation of Wind Turbine Technologies

FloDesign Wind Turbine Corp.

Matthew Commons, CFO

FloDesign Wind Turbine – background

- Founded in 2007, 60 employees
- Headquartered in Waltham, MA
- 200 + patent applications (12 awarded)
- Awards: (over \$13 million raised)
 - 2008: MIT Clean Energy Prize & ICE Winner
 - 2009:  \$8.3 mm award
 - 2010: Mass CEC Financing Package, \$3 mm
- Investors (over \$40 million raised):
 - Kleiner Perkins Caufield & Byers
 - Goldman Sachs
 - Technology Partners
 - VantagePoint Venture Partners



Key challenges for traditional wind growth

- Mega-Farms / Grid Constraints
- Distributed Wind Uneconomic
- Environmental & Permitting Problems
- Global Turbine Oversupply
- Near Maximum Efficiency



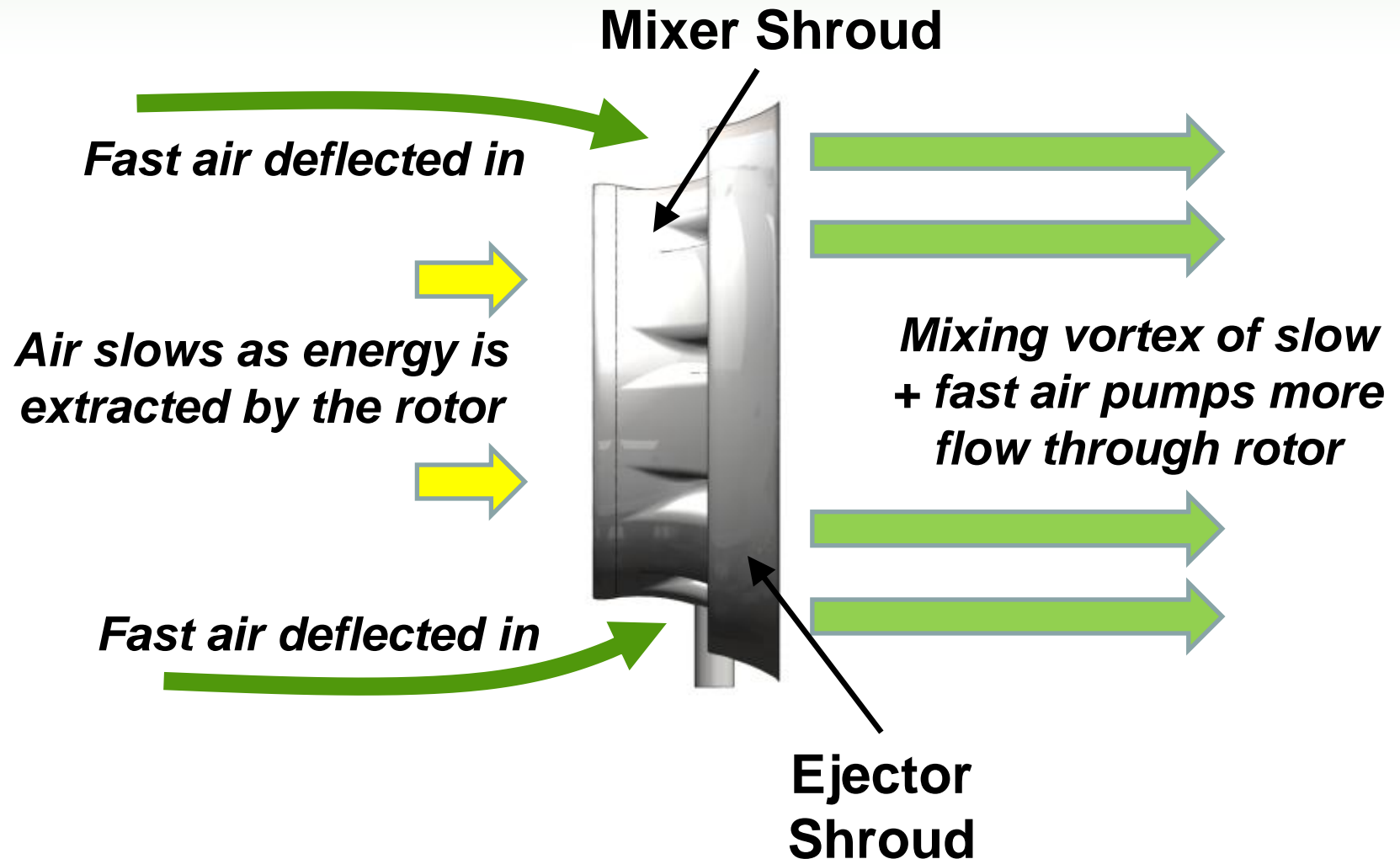
Mixer-ejector technology = Disruptive potential and lower cost of energy

- Mature aerospace technology
- 3x - 4x traditional efficiency
- Higher energy density per acre
- Simplified drivetrain
- Lower maintenance
- Environmentally sensitive

***Target: Substantially lower
lifetime cost per MWh***



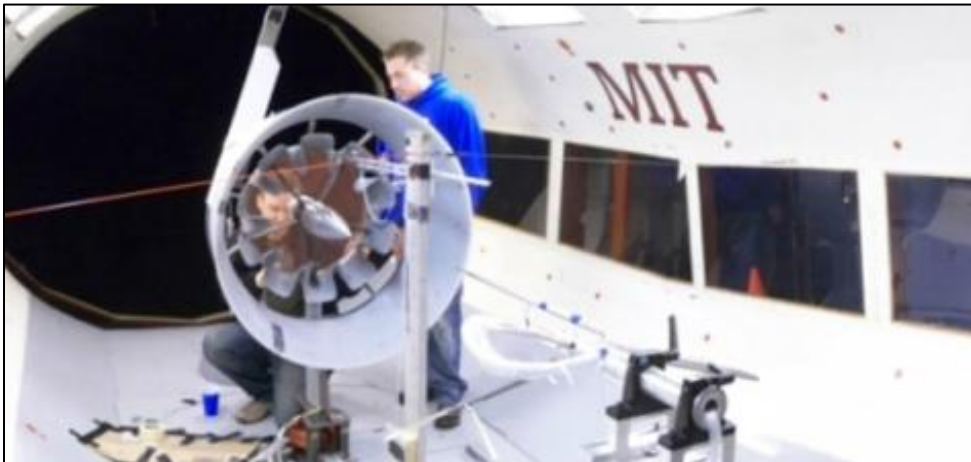
Mixer-ejector technology = Disruptive potential and lower cost of energy



ARPA-E enabling next-generation research

ARPA-E has enabled a dynamic research program built around FloDesign's theoretical/empirical design system:

- Advanced CFD / theoretical design
- MIT & Maryland wind tunnel tests
- 6 kW prototype field testing
- Advanced technology turbine test



6 kW Tower Erection



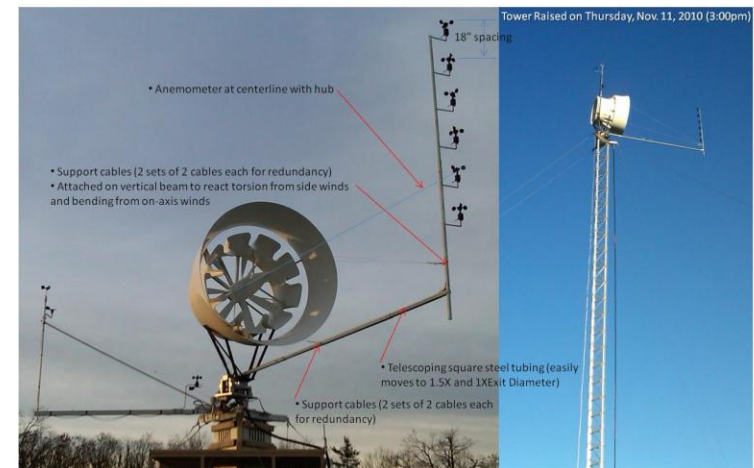
ARPA-E enabling next-generation research

Key Results:

- Empirical data correlates to theoretical predictions
- 3X Betz limit demonstrated in wind tunnel
- Significant learning around fundamentals of shrouded turbines



Maryland Wind Tunnel



Prototype Wake Testing

Shrouded turbine research still in early stages with significant upside

- Unlike traditional open-bladed turbines, mixer-ejector turbines are still in the very early stages of their learning curve.
- Additional learning from full-scale turbine in 2011
- Remaining work under ARPA-E program will enable:
 - Continued refinement of existing concepts
 - Research into more advanced, experimental concepts

